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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/788,583	02/27/2004	Sam S. Lightstone,	CA920030120US1	6838

45112	7590	12/15/2006

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EXAMINER
LEROUX, ETIENNE PIERRE

ART UNIT	PAPER NUMBER
2161	

DATE MAILED: 12/15/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

	Application No.	Applicant(s)
Office Action Summary	10/788,583	LIGHTSTONE ET AL.
	Examiner	Art Unit	
	Etienne P. LeRoux	2161	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>13 November 2006</u>.

2a)☒ This action is **FINAL**.   2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) <u>1-19</u> is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) <u>1-19</u> is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on <u>27 February 2004</u> is/are: a)☒ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All   b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.

4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .

5) ☐ Notice of Informal Patent Application (PTO-152)

6) ☐ Other: _____.

Claim Status

Claims 1-19 are pending. Claims 1-19 are rejected as detailed below.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1-5, 8-11 and 14-17 are rejected under 35 U.S.C. 103(a) as being unpatentable

over US Pat No 6,397,207 issued to Bleizeffer et al (hereafter Bleizeffer) in view of Pub No US

2004/0003004 issued to Chaudhuri et al (hereafter Chaudhuri).

Claims 1, 8 and 14:

Bleizeffer discloses

estimating a cost to execute each query within a plurality of queries of a workload: [query

explain data, col 2, line 22-30];

selecting a sub-set of queries from the workload according to a threshold level, the

threshold level being a function of the total estimated cost to execute all the queries of the

workload [higher than average statement cost, col 2, line 27];

Bleizeffer discloses the elements of the claimed invention as noted above but does not

disclose compressing the selected sub-set of queries. Chaudhuri discloses compressing the

selected sub-set of queries [Fig 3, paragraph 35]. It would have been obvious to one of ordinary

skill in the art at the time the invention was made to modify Bleizeffer to include compressing

the selected sub-set of queries as taught by Chaudhuri for the purpose of reducing the workload

by removing redundant or similar queries [claim 10].

Claims 2, 9 and 15:

The combination of Bleizeffer and Chaudhuri discloses the elements of claim 1/8/14 as

noted above and furthermore discloses the step of selecting includes selecting from the queries in

decreasing estimated cost of execution rank order such that an aggregate estimated cost of

execution for the selected queries is less than equal to the threshold [Chaudhuri, paragraph 35,

priority queue]

Claim 3:

The combination of Bleizeffer and Chaudhuri discloses the elements of claim 1 as noted

above and furthermore discloses wherein the cost of execution is a function of a parameter

selected from the group consisting of estimated execution time of a query, amount of computer

memory required for execution of a query, amount of I/O usage required for execution of a

query, amount of CPU utilization required for execution of a query, and throughput contribution

required for execution of a query and combination thereof [Bleizeffer, paragraph 2, lines 7-14]

Claims 4, 10 and 16:

The combination of Bleizeffer and Chaudhuri discloses the elements of claim 1/8/14 as

noted above and furthermore discloses wherein the cost of execution is a function of any of: a

frequency/weighting component associated with each query; an estimated time of execution for

each query; an amount of computer memory required for execution of a query; an amount of I/O

usage required for execution of a query; an amount of CPU utilization required for execution of a

query; and, an amount of throughput contribution required for execution of a query [Chaudhuri,

paragraph 8]

Claims 5, 11 and 17:

The combination of Bleizeffer and Chaudhuri discloses the elements of claim 1/8/14 as

noted above and furthermore discloses wherein the threshold is derived from any of: a

percentage of a total execution time of the workload; an allotted execution time for the workload;

a determination made by applying successive approximations techniques; and a determination

made when an allotted threshold selection time has been reached [Chaudhuri, paragraph 27,

queries taking longer than one second are logged].

Claims 6, 7, 12, 13, 18 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable

over the combination of Bleizeffer and Chaudhuri and further in view of US Pat No 5,960,428

issued to Lindsay et al (hereafter Lindsay).

Claims 6, 12 and 18:

The combination of Bleizeffer and Chaudhuri discloses the elements of claims 1/8/14 as

noted above but does not disclose wherein the step of selecting further comprising sub-dividing

the plurality of queries into groups of queries based upon query types wherein the threshold

applied to a group of queries is a percentage of a total estimated cost of execution for the group

of queries. Lindsay discloses wherein the step of selecting further comprising sub-dividing the

plurality of queries into groups of queries based upon query types wherein the threshold applied

to a group of queries is a percentage of a total estimated cost of execution for the group of

queries [col 2, lines 45-60]. It would have been obvious to one of ordinary skill in the art at the

time the invention was made to modify the above combination of references to include wherein

the step of selecting further comprising sub-dividing the plurality of queries into groups of

queries based upon query types wherein the threshold applied to a group of queries is a

percentage of a total estimated cost of execution for the group of queries as taught by Lindsay for

the purpose of efficient evaluation and execution of SQL queries [col 2, lines 48-50].

Claims 7, 13 and 19:

The combination of Bleizeffer, Chaudhuri and Lindsay disclose the elements of claims

1/8/14 as noted above and further ore discloses wherein the threshold applied to a group of

queries is derived from an allotted execution time for the group of queries [Chaudhuri, abstract]

Response to Arguments

Applicant's arguments filed 11/13/2006 have been fully considered but they are not

persuasive.

Applicant Argues:

Applicant states in paragraph 19 "Therefore, Applicants submit that Bleizeffer and

Chaudhuri fail to teach or disclose "selecting a sub-set of queries from the workload according to

a threshold level, the threshold level being a function of the total estimated cost to execute all the

queries of the workload.

Examiner Responds:

Examiner is not persuaded for the reasons given below.

All claim interpretation is predicated upon the broadest reasonable interpretation of the claim terms which would be fairly conveyed to one of ordinary skill in the pertinent art. Note that the order in which the below items are considered during claim interpretation has been the topic of much debate in the courts with respect to infringement/validity of issued patent claims. However, during prosecution of an application, the examiner's responsibility is simply to carefully evaluate the disclosure and give claims their broadest reasonable interpretation in light of that disclosure. By reading and understanding the disclosure and considering the items below, regardless of the order in which they are considered, the examiner will be able to set forth and use a reasonable claim interpretation in the Office action. This provides Applicant with the opportunity to clarify the scope of coverage through claim amendment or by providing factual evidence on the record why the examiner's position is unreasonably broad.

The following items are things the examiner should look for and consider when determining and conveying in an Office action the broadest reasonable interpretation of the claims being examined:

an "explicit and deliberate" definition in the specification, which carries through to the claims and limits the claims to the explicit and deliberate definition in the specification;

§ 112, 6th paragraph having been invoked which limits a claimed "means" for achieving claimed functionality to what's disclosed for achieving that functionality and items one of ordinary skill in the art would recognize as functional equivalents to what is disclosed; and

"intrinsic evidence" present in the disclosure which does not limit the claims to the examples provided but instead may set forth items which are clearly covered and may set forth items which are not covered.

Thus if there is no explicit and deliberate definition in the specification and Applicant has

not chosen to invoke the rebuttable presumption that § 112, 6th paragraph applies by using

"means" plus a modifying function in their claim, then the claims are not limited by the

accompanying disclosure.

Absent any of the above noted items, the words in the context of the claims themselves,

dictionary definitions (specialized and generic) and the level of ordinary skill (from treatises, a

search of the prior art and other specialized information sources) are used to determine the

broadest reasonable interpretation of the claim.

The specification of the present invention does not provide an explicit and deliberate

definition of "select" and thus examiner must give "select" its broadest reasonable interpretation

which would be fairly conveyed to one of ordinary skill in the pertinent art. One of ordinary

skill in the art would consult a specialized dictionary for art accepted meaning of "select." If the

specialized dictionary fails to provide a reasonable interpretation of "select," then a generic

dictionary must be consulted.

A specialized dictionary definition[1] of "select" is the following:

In database management, to choose records according to a specified set of criteria.

Examiner maintains the following disclosure of Bleizeffer is accord with the above

definition of "select[ing]" i.e., to choose records according to a specified set of criteria.

Bleizeffer discloses in column 6, lines 25-45 the following:

The principal components of the query visualization module 50 include a report creator
60, a graph generator 62, and a parameter browser 64. The above-described modules help the
user to better understand the query explain data, the subsystem parameters, and the like, in a
variety of ways. For example, as described in greater detail below, the report creator 60

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[1] Microsoft Computer Dictionary, Fifth Edition

selectively prepares a report of the access path data, statement cost data, and object statistics data in an easily understood, text-based format. The user selects one or more query statements, as well as subsets of the query explain data for the selected query statements to include in the report. The report provides the user with the requested query explain data in a centralized and readily understood format, allowing the user to efficiently analyze and improve SQL query performance.

Bleizeffer discloses per the above that a user is provided with a report which allows the user to analyze and improve SQL performance based on, for example, statement cost. Furthermore, Bleizeffer discloses in column 2, lines 25–30 that one of ordinary skill in the art would use access path data, statement cost data and object statistics to assist the user in analyzing and improving the performance of SQL statements. For example, a query with a higher-than average-statement cost might alert the user to inefficiencies in the access path. This reads on the claim limitation "selecting a sub-set of queries from the workload [all query statements in the report] according to a threshold level [average statement cost]." Per the disclosure of Bleizeffer, one of ordinary skill in the art would have been motivated to select a SQL statement with higher-than-average statement cost for the purpose of making changes to the query and/or database such as by adding an index in order to avoid a table space scan [Bleizeffer, col 2, lines 25-30].

Furthermore, the disclosure by Bleizeffer of an average cost reads on "total estimated cost" in the claim limitation "the threshold level being a function of the total estimated cost to execute all the queries of the workload." Examiner maintains the claimed "total estimated cost" is inherent in the calculation of an average SQL statement cost which is taught by Bleizeffer.

Applicant Argues:

Applicant states in the second paragraph of page 14 "Applicants fail to see any teaching

in Lindsay of the concept of sub-dividing a set of queries into groups based on query type."

Examiner Responds:

Examiner is not persuaded. Above language, i.e., sub-dividing a set of queries into

groups based on query type" is not included in claim 6. In fact claim 6 recites "sub-dividing the

plurality of queries into groups of queries based upon query types." Lindsay discloses dividing

queries into a star/join type and a non-star/join type.

Applicant Argues:

Applicant states in the second paragraph of page 15, "Consequently, there is no

motivation to combine Bleizeffer and Chaudhuri."

Examiner Responds:

Examiner is not persuaded. The reason for combination is included in above Office

action but for easy reference is given below:

compressing the workload to remove redundant or similar queries prior to examining the

queries.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time

policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE

MONTHS from the mailing date of this action. In the event a first reply is filed within TWO

MONTHS of the mailing date of this final action and the advisory action is not mailed until after

the end of the THREE-MONTH shortened statutory period, then the shortened statutory period

will expire on the date the advisory action is mailed, and any extension fee pursuant to 37

CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,

however, will the statutory period for reply expire later than SIX MONTHS from the mailing

date of this final action.

Contact Information

Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Etienne P. LeRoux whose telephone number is (571) 272-4022.

The examiner can normally be reached on Monday through Friday, 8:00 am - 4:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Jeffrey Gaffin can be reached on (571) 272-4146. The fax phone number for the

organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent

Application Information Retrieval (PAIR) system. Status information for published applications

may be obtained from either Private PAIR or Public PAIR. Status information for unpublished

applications is available through Private PAIR only. For more information about the PAIR

system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR

system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would

like assistance from a USPTO Customer Service Representative or access to the automated

information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Etienne LeRoux

12/4/2006

Primary examiner